

CLAIMS

1. A method of assigning network resources to L1-VPNs on a communication network, the method comprising the steps of:

collecting information about available resources on the network; and
designating a first subset of the resources as dedicated L1-VPN resources; and
designating a second subset of the resources as shared L1-VPN resources.

2. The method of claim 1, wherein the step of designating the first subset of the resources as dedicated L1-VPN resources comprises assigning at least a first portion of the first subset of the resources to a first L1-VPN subscriber.

3. The method of claim 2, wherein the resources assigned to the first L1-VPN subscriber may only be used by the L1-VPN subscriber.

4. The method of claim 1, wherein the step of designating a second subset of the resources as shared L1-VPN resources comprises assigning at least a second portion of the second subset of the resources to be shared by at least two L1-VPN subscribers.

5. The method of claim 4, wherein the at least two L1-VPN subscribers are a group of L1-VPN subscribers, and wherein the shared resources assigned to group of L1-VPN subscribers may be used by one of group members at a time.

6. The method of claim 1, further comprising designating a subset of the resources as public L1-VPN resources.

7. The method of claim 1, wherein resources not designated as dedicated L1-VPN resources and not designated as shared L1-VPN resources are public L1-VPN resources.

8. The method of claim 1, further comprising the step of communicating information associated with the steps of designating the first subset of the resources as dedicated L1-VPN

resources; and designating the second subset of the resources as shared L1-VPN resources to network elements to enable those resources to be allocated on the communication network.

9. A method of allocating network resources to L1-VPNs on a communication network, the method comprising the steps of:

receiving assignment information associated with assignment of network resources to L1-VPNs; and

receiving a request associated with an L1-VPN subscriber for network resources; and

allocating assigned network resources to fulfill the request.

10. The method of claim 9, wherein the assignment information contains an indication of which network resources are network resources that may only be used by one L1-VPN subscriber, and which network resources may only be used by a group of L1-VPN subscribers.

11. The method of claim 9, wherein the step of allocating assigned network resources comprises determining current assignment information for the L1-VPN subscriber to determine which network resources have been assigned to the L1-VPN subscriber, and preferentially allocating network resources to the L1-VPN subscriber from those network resources that have been assigned to the L1-VPN subscriber.

12. The method of claim 9, wherein the step of allocating assigned network resources comprises determining current assignment information for the L1-VPN subscriber to determine which network resources have been assigned to the L1-VPN subscriber, and determining which of the assigned network resources are currently in use.

13. The method of claim 12, wherein the step of allocating further comprises preferentially selecting network resources that have been assigned to the L1-VPN subscriber and which are not currently in use to fulfill the request, and selecting public network resources to augment the assigned resources to fulfill the request if necessary.

14. The method of claim 13, wherein the step of allocating comprises prioritizing between L1-VPN subscribers to enable a first L1-VPN subscriber associated with assigned network resources to preempt a second L1-VPN subscriber currently allocated the assigned network resource.

15. The method of claim 14, wherein prioritizing results in a transfer of the network resource from the second L1-VPN subscriber to the first L1-VPN subscriber.

16. The method of claim 9, wherein the step of allocating assigned network resources to fulfill the request comprises temporarily dedicating the resources to be used by only one L1-VPN subscriber for the allocation period.

17. The method of claim 9, wherein the step of allocating is done on demand.

18. The method of claim 9, wherein the step of allocating allows network resources to be shared between multiple L1-VPN subscribers by allowing the same network resources to be allocated to more than one L1-VPN subscriber, one L1-VPN subscriber at a time.

19. An apparatus for assigning network resources to L1-VPNs on a communication network, comprising:

a processor containing control logic configured to:

assign network resources to L1-VPN subscribers; and

allocate assigned resources in response to requests.

20. The apparatus of claim 19, wherein the resources are optical network resources, and wherein allocated assigned resources may be used by only one L1-VPN subscriber while allocated.